WEST Search History

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DATE: Friday, November 26, 2004

Hide?	Set Name	Query	Hit Count
	DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR		
☐	L8	L7 not l6	0
☐	L7	total adj reflection and (L5 or l3)	2
☐	L6	attenuated adj total adj reflection and (L5 or l3)	2
☐	L5	walker-Dwight$.in.	12
☐	L4	tarczynski-f$.in.	1
☐	L3	anderson-j$.in.	6062
	DB=PGPB,USPT; PLUR=YES; OP=OR		
☐	L2	anderson-j$.in.	2992
☐	L1	6737024.pn.	1

END OF SEARCH HISTORY

WEST Search History

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DATE: Friday, November 26, 2004

Hide?	Set Name	Query	Hit Count
	DB=PGPB,USPT; PLUR=YES; OP=OR		
☐	L24	5965719.pn.	1
☐	L23	5578827.pn.	1
	DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR		
☐	L22	l20 and l19	71
☐	L21	l20 and l19L20	0
☐	L20	solid adj (phase or support)	127626
☐	L19	(suzuki and mitsunobu) near5 reaction	191
☐	L18	(suzuki and freidel adj craft) near5 reaction	0
☐	L17	(suzuki and freidel adj crafts) near5 reaction	0
☐	L16	(suzuki and freidel) near5 reaction	0
☐	L15	suzuki near5 reaction	1469
☐	L14	(suzuki and mitsunobu and freidel) near5 reaction	0
☐	L13	continuous$ near5 monitor$ and l9	28
☐	L12	light near5 absorbance and l9	6
☐	L11	absorbance and l10	7
☐	L10	((monitor$ or observ$ or measur$) with reaction) same (attenuated adj total adj reflection)	28
☐	L9	((monitor$ or observ$ or measur$) same reaction) and l1	171
☐	L8	reaction and l1	334
☐	L7	Suzuki and L1	22
☐	L6	Suzuki near5 reaction and L1	0
☐	L5	Freidel adj Craft and l1	0
☐	L4	Mitsunobu and L1	4
☐	L3	Mitsunobu near5 reaction and L1	0
☐	L2	Mitsunobu adj reaction and L1	0
☐	L1	attenuated adj total adj reflection	779

END OF SEARCH HISTORY

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                                                         ENTRY    SESSION
CA SUBSCRIBER PRICE                                      -0.70      -9.10

=> fil medline biosis caplus embase wpids
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                         ENTRY    SESSION
FULL ESTIMATED COST                                      12.92     150.35

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)          SINCE FILE      TOTAL
                                                         ENTRY    SESSION
CA SUBSCRIBER PRICE                                      -0.70      -9.10

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=> d his

     (FILE 'HOME' ENTERED AT 16:46:40 ON 26 NOV 2004)

     FILE 'MEDLINE, BIOSIS, CAPLUS, EMBASE, WPIDS' ENTERED AT 16:47:01 ON 26
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```
     NOV 2004
L1         5215 ATTENUATED (W) TOTAL (W) REFLECTION
L2       281382 (MONITOR? OR OBSERV? OR MEASUR?) (S) (REACTION)
L3           88 L1 AND L2
L4        48132 LIGHT (5N) ABSORB?
L5            1 L3 AND L4
L6           10 ABSORB? AND L3
L7           10 DUP REM L6 (0 DUPLICATES REMOVED)
L8            9 L7 NOT L5

     FILE 'STNGUIDE' ENTERED AT 17:00:21 ON 26 NOV 2004

     FILE 'MEDLINE, BIOSIS, CAPLUS, EMBASE, WPIDS' ENTERED AT 17:03:49 ON 26
     NOV 2004
L9            5 S L1 AND ANDERSON J?/AU
L10           2 L1 AND TARCZYNSKI F?/AU
L11           7 L1 AND WALKER D?/AU
L12          10 L9 OR L10 OR L11
L13           8 DUP REM L12 (2 DUPLICATES REMOVED)

     FILE 'STNGUIDE' ENTERED AT 17:14:53 ON 26 NOV 2004

     FILE 'MEDLINE, BIOSIS, CAPLUS, EMBASE, WPIDS' ENTERED AT 17:16:13 ON 26
     NOV 2004
L14           2 L12 AND L2
L15           1 L14 NOT L5
L16           1 L14 NOT L15

     FILE 'MEDLINE, BIOSIS, CAPLUS, EMBASE, WPIDS' ENTERED AT 17:27:08 ON 26
     NOV 2004

=> l3 and reaction
L17          88 L3 AND REACTION

=> solid (5n) (phase or support) and l3
L18           6 SOLID (5N) (PHASE OR SUPPORT) AND L3

=> dup rem l18
PROCESSING COMPLETED FOR L18
L19           5 DUP REM L18 (1 DUPLICATE REMOVED)

=> l19 not l14
L20           4 L19 NOT L14

=> t ti l19 1-4

L19  ANSWER 1 OF 5  CAPLUS  COPYRIGHT 2004 ACS on STN
TI   In situ vibrational spectroscopic investigation of solid/liquid catalytic
     interfaces

L19  ANSWER 2 OF 5  CAPLUS  COPYRIGHT 2004 ACS on STN  DUPLICATE 1
TI   Method and apparatus for monitoring solid phase
     chemical reactions

L19  ANSWER 3 OF 5  CAPLUS  COPYRIGHT 2004 ACS on STN
TI   Method for monitoring chemical processes

L19  ANSWER 4 OF 5  CAPLUS  COPYRIGHT 2004 ACS on STN
TI   FT-infrared spectroscopy and IR-microscopy on-bead analysis of
     solid-phase synthesis
```

=> d ibib abs l19 1-4

L19 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:181180 CAPLUS
TITLE: In situ vibrational spectroscopic investigation of solid/liquid catalytic interfaces
AUTHOR(S): LeBlanc, Rene J.; Ortiz-Hernandez, Ivelisse; Strunk, Michael R.; Williams, Christopher T.
CORPORATE SOURCE: Department of Chemical Engineering, University of South Carolina, Columbia, SC, 29208, USA
SOURCE: Abstracts of Papers, 225th ACS National Meeting, New Orleans, LA, United States, March 23-27, 2003 (2003), COLL-076. American Chemical Society: Washington, D. C.
CODEN: 69DSA4
DOCUMENT TYPE: Conference; Meeting Abstract
LANGUAGE: English
AB The application of in-situ vibrational spectroscopy to the study of solid-liquid catalytic interfaces is providing previously unavailable information regarding the surface chemical of such systems. In this talk, the techniques of surface-enhanced Raman spectroscopy (SERS), **attenuated total reflection** IR spectroscopy (ATR-IRS), and sum-frequency spectroscopy (SFS) will be discussed. Two specific examples from our laboratory will be used to highlight the utility of these approaches. The first involves the adsorption of a chiral modifier cinchonidine onto platinum for the enantioselective hydrogenation of C=O bonds. The second involves the interaction of aliphatic nitriles with both metal and oxide surfaces used in heterogeneous nitrile hydrogenation. In both cases, in-situ **measurements** have provided new insight into the surface environment present under **reaction** conditions. The prospects and challenges of using these approaches in the future for other **solid**-catalyzed liquid-**phase** reactions will be discussed.

L19 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 1
ACCESSION NUMBER: 2001:300961 CAPLUS
DOCUMENT NUMBER: 134:297921
TITLE: Method and apparatus for monitoring **solid phase** chemical reactions
INVENTOR(S): Anderson, Joanne Elizabeth; Tarczynski, Frank Joseph; Walker, Dwight Sherod
PATENT ASSIGNEE(S): Glaxo Group Limited, UK
SOURCE: PCT Int. Appl., 35 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001029537	A2	20010426	WO 2000-US28218	20001012
WO 2001029537	A3	20011129		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
EP 1221037	A2	20020710	EP 2000-970831	20001012

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL

JP 2003512615 T2 20030402 JP 2001-532079 20001012

PRIORITY APPLN. INFO.: US 1999-159673P P 19991015

WO 2000-US28218 W 20001012

AB A method for **monitoring** a **solid phase** chemical **reaction** comprises the steps of: (a) providing a **reaction** mixture comprising a **solid support** and a **reaction** medium, (b) contacting an **attenuated total reflection** element to said **reaction** mixture; and then (c) **monitoring** the chemical **reaction** on the **solid support** through the **attenuated total reflection** element. The monitoring step is carried out by **attenuated total reflection** spectroscopy. An advantage of the invention is that the chemical **reaction** on the **solid support** may be directly **monitored**, rather than indirectly **monitoring** that chemical **reaction** by **monitoring reaction** constituents in the **reaction** medium.

L19 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2001:907179 CAPLUS

DOCUMENT NUMBER: 136:14892

TITLE: Method for monitoring chemical processes

INVENTOR(S): Hurwood, Tracey Victoria; Wiffen, Jonathan William; Grieve, Bruce Donaldson; Wellings, Donald Alfred; Wells, Ian

PATENT ASSIGNEE(S): Avecia Limited, UK

SOURCE: Brit. UK Pat. Appl., 19 pp.
CODEN: BAXXDU

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 2358921	A1	20010808	GB 2000-25508	20001018

PRIORITY APPLN. INFO.: GB 1999-24640 A 19991019

AB A method for monitoring reactions or chemical processes, such as **solid phase** synthesis, comprises detecting chromophoric changes using attenuated total reflectance spectroscopy (ATR) techniques, preferably in the UV/ visible wave band, e.g. 150 to 550 nm. The spectral data is collected and analyzed using multivariant data manipulation processes such as principal component anal. The collection and anal. may be performed in real time.

L19 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2001:370777 CAPLUS

DOCUMENT NUMBER: 135:293766

TITLE: FT-infrared spectroscopy and IR-microscopy on-bead analysis of **solid-phase** synthesis

AUTHOR(S): Bandel, Holger; Haap, Wolfgang; Jung, Gunther

CORPORATE SOURCE: Germany

SOURCE: Combinatorial Chemistry (1999), 479-498. Editor(s): Jung, Guenther. Wiley-VCH Verlag GmbH: Weinheim, Germany.
CODEN: 69BIF3

DOCUMENT TYPE: Conference; General Review

LANGUAGE: English

AB A review, with 40 refs., on Fourier transform IR (FT-IR) spectroscopy, as an effective method in **solid-phase** organic synthesis for

reaction monitoring. Several anal. methods using FT-IR spectroscopy are presented, including potassium bromide pellet method and **attenuated total reflection** spectroscopy,. Topics covered include single bead **reaction monitoring** and examination of the interaction between resin-bound reactive groups via IR microscopy.

REFERENCE COUNT: 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
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CA SUBSCRIBER PRICE	-2.80	-11.90

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FILE 'MEDLINE, BIOSIS, CAPLUS, EMBASE, WPIDS' ENTERED AT 16:47:01 ON 26 NOV 2004

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L1          5215 ATTENUATED (W) TOTAL (W) REFLECTION
L2        281382 (MONITOR? OR OBSERV? OR MEASUR?) (S) (REACTION)
L3            88 L1 AND L2
L4         48132 LIGHT (5N) ABSORB?
L5             1 L3 AND L4
L6            10 ABSORB? AND L3
L7            10 DUP REM L6 (0 DUPLICATES REMOVED)
L8             9 L7 NOT L5
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FILE 'STNGUIDE' ENTERED AT 17:00:21 ON 26 NOV 2004

FILE 'MEDLINE, BIOSIS, CAPLUS, EMBASE, WPIDS' ENTERED AT 17:03:49 ON 26 NOV 2004

```
L9             5 S L1 AND ANDERSON J?/AU
L10            2 L1 AND TARCZYNSKI F?/AU
L11            7 L1 AND WALKER D?/AU
L12           10 L9 OR L10 OR L11
L13            8 DUP REM L12 (2 DUPLICATES REMOVED)
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FILE 'STNGUIDE' ENTERED AT 17:14:53 ON 26 NOV 2004

FILE 'MEDLINE, BIOSIS, CAPLUS, EMBASE, WPIDS' ENTERED AT 17:16:13 ON 26 NOV 2004

```
L14            2 L12 AND L2
L15            1 L14 NOT L5
L16            1 L14 NOT L15
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FILE 'MEDLINE, BIOSIS, CAPLUS, EMBASE, WPIDS' ENTERED AT 17:27:08 ON 26 NOV 2004

```
L17          88 L3 AND REACTION
L18           6 SOLID (5N) (PHASE OR SUPPORT) AND L3
L19           5 DUP REM L18 (1 DUPLICATE REMOVED)
L20           4 L19 NOT L14

     FILE 'STNGUIDE' ENTERED AT 17:31:09 ON 26 NOV 2004

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COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                      ENTRY     SESSION
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		DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR	
☐	L22	l20 and l19	71
☐	L21	l20 and l19L20	0
☐	L20	solid adj (phase or support)	127626
☐	L19	(suzuki and mitsunobu) near5 reaction	191
☐	L18	(suzuki and freidel adj craft) near5 reaction	0
☐	L17	(suzuki and freidel adj crafts) near5 reaction	0
☐	L16	(suzuki and freidel) near5 reaction	0
☐	L15	suzuki near5 reaction	1469
☐	L14	(suzuki and mitsunobu and freidel) near5 reaction	0
☐	L13	continuous$ near5 monitor$ and l9	28
☐	L12	light near5 absorbance and l9	6
☐	L11	absorbance and l10	7
☐	L10	((monitor$ or observ$ or measur$) with reaction) same (attenuated adj total adj reflection)	28
☐	L9	((monitor$ or observ$ or measur$) same reaction) and l1	171
☐	L8	reaction and l1	334
☐	L7	Suzuki and L1	22
☐	L6	Suzuki near5 reaction and L1	0
☐	L5	Freidel adj Craft and l1	0
☐	L4	Mitsunobu and L1	4
☐	L3	Mitsunobu near5 reaction and L1	0
☐	L2	Mitsunobu adj reaction and L1	0
☐	L1	attenuated adj total adj reflection	779

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 NEWS  3  SEP 01  INPADOC: New family current-awareness alert (SDI) available
 NEWS  4  SEP 01  New pricing for the Save Answers for SciFinder Wizard within
                  STN Express with Discover!
 NEWS  5  SEP 01  New display format, HITSTR, available in WPIDS/WPINDEX/WPIX
 NEWS  6  SEP 27  STANDARDS will no longer be available on STN
 NEWS  7  SEP 27  SWETSCAN will no longer be available on STN
 NEWS  8  OCT 28  KOREAPAT now available on STN
 NEWS  9  NOV 18  Current-awareness alerts, saved answer sets, and current
                  search transcripts to be affected by CERAB, COMPUAB, ELCOM,
                  and SOLIDSTATE reloads

 NEWS EXPRESS  OCTOBER 29 CURRENT WINDOWS VERSION IS V7.01A, CURRENT
               MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
               AND CURRENT DISCOVER FILE IS DATED 11 AUGUST 2004
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 NEWS WWW      CAS World Wide Web Site (general information)
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=> file medline, biosis, caplus, embase, wpids

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FULL ESTIMATED COST	0.21	0.21

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=> attenuated (w) total (w) reflection
L1 5215 ATTENUATED (W) TOTAL (W) REFLECTION

=> (monitor? or observ? or measur?) (s) (reaction)
4 FILES SEARCHED...
L2 281382 (MONITOR? OR OBSERV? OR MEASUR?) (S) (REACTION)

=> l1 and l2
L3 88 L1 AND L2

=> light (5n) absorb?
L4 48132 LIGHT (5N) ABSORB?

=> l3 and l4
L5 1 L3 AND L4

=> d ibib abs l5

L5 ANSWER 1 OF 1 WPIDS COPYRIGHT 2004 THE THOMSON CORP on STN
ACCESSION NUMBER: 2001-355119 [37] WPIDS
DOC. NO. NON-CPI: N2001-258056
DOC. NO. CPI: C2001-109980
TITLE: **Monitoring** solid phase chemical **reaction** involves providing **reaction** mixture comprising solid support and liquid **reaction** medium, and **monitoring** using **attenuated total reflection** spectroscopy.
DERWENT CLASS: A89 B04 J04 S03
INVENTOR(S): ANDERSON, J E; TARCZYNSKI, F J; WALKER, D S
PATENT ASSIGNEE(S): (GLAX) GLAXO GROUP LTD
COUNTRY COUNT: 95
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2001029537	A2	20010426	(200137)*	EN	33
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW					
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW					
AU 2000080154	A	20010430	(200148)		
EP 1221037	A2	20020710	(200253)	EN	
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI					
JP 2003512615	W	20030402	(200325)		42

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE

WO 2001029537	A2	WO 2000-US28218	20001012
AU 2000080154	A	AU 2000-80154	20001012
EP 1221037	A2	EP 2000-970831	20001012
		WO 2000-US28218	20001012
JP 2003512615	W	WO 2000-US28218	20001012
		JP 2001-532079	20001012

FILING DETAILS:

PATENT NO	KIND		PATENT NO
AU 2000080154	A	Based on	WO 2001029537
EP 1221037	A2	Based on	WO 2001029537
JP 2003512615	W	Based on	WO 2001029537

PRIORITY APPLN. INFO: US 1999-159673P 19991015

AN 2001-355119 [37] WPIDS

AB WO 200129537 A UPAB: 20010704

NOVELTY - **Monitoring** a solid phase chemical **reaction** by (i) providing a **reaction** mixture comprising a solid support and a liquid **reaction** medium; (ii) contacting an **attenuated total reflection** element to the **reaction** mixture; and then (iii) directly **monitoring** the chemical **reaction** on the solid support through the **attenuated total reflection** element. The **monitoring** step is conducted using **attenuated total reflection** spectroscopy.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for:

(1) An apparatus for generating a solid phase combinatorial library, comprising (a) a chemical synthesis robot to receive **reaction** wells; (b) a reagent repository operatively associated with the robot; (c) an **attenuated total reflection** element operatively associated with the robot for insertion into at least one of the **reaction** wells; (d) an **attenuated total reflection monitor** operatively associated with the reflection element to **monitor** a solid phase synthesis **reaction** in the well by **attenuated total reflection** spectroscopy; and (e) a synthesis controller operatively associated with both the reagent repository and the robot, to control the construction of a solid phase combinatorial library in the **reaction** wells and operatively associated with the reflection **monitor**.

(2) A method of making a combinatorial library by solid phase chemical synthesis involving (a) combining a solid support, a liquid **reaction** medium and **reaction** reagents to produce a **reaction** mixture in a **reaction** well; (b) contacting an **attenuated total reflection** element with the **reaction** mixture; (c) directly **monitoring** the chemical **reaction** on the solid support through the reflection element to detect completion of the **reaction**; (d) separating the solid support from the liquid **reaction** medium and the **reaction** reagents upon detecting completion; and (e) repeating (a) - (c) with the separated solid supports; and

(3) A method of making a combinatorial library comprising at least 100 different compounds, with each of the compounds immobilized on a discrete solid support, by at least two sequential reaction cycles each comprising a solid phase chemical reaction and completing each cycle in an average of 1-8 hours.

USE - For monitoring solid phase chemical reactions.

ADVANTAGE - The chemical **reaction** on the solid support can be directly **monitored**, rather than indirectly **monitoring**

the **reaction** constituents in the **reaction** medium.
DESCRIPTION OF DRAWING(S) - The drawing shows the apparatus and the relationship of the solid support beads to the attenuated total reflectance element.
probe 20
total reflection element 22
uv/visible light spectrograph 25
solid phase reaction medium 30
liquid phase 31
solid support 32
paths 35,36
Dwg.1A-C/13

=> absorb? and l3
L6 10 ABSORB? AND L3

=> dup rem l6
PROCESSING COMPLETED FOR L6
L7 10 DUP REM L6 (0 DUPLICATES REMOVED)

=> l7 not l5
L8 9 L7 NOT L5

=> t ti l8 1-9

L8 ANSWER 1 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
TI In Situ **Attenuated Total Reflection** Infrared Spectroscopy: A Sensitive Tool for the Investigation of Reduction-Oxidation Processes on Heterogeneous Pd Metal Catalysts

L8 ANSWER 2 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
TI Evaluation of structure and gas response in porphyrin Langmuir-Blodgett films by **attenuated total reflection** measurements

L8 ANSWER 3 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
TI Isobutylene polymerization kinetics at low [TiCl4] via real-time in situ FTIR-ATR spectroscopy

L8 ANSWER 4 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
TI Attenuated total reflectance FT-IR spectroscopy to **measure** interfacial **reaction** kinetics at silica surfaces

L8 ANSWER 5 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
TI **Attenuated total reflection** FT-IR spectroscopy to **measure** interfacial **reaction** kinetics at silica surfaces

L8 ANSWER 6 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
TI An approach to direct process treatment in phase transfer catalysis (PTC): **attenuated total reflection** spectroscopic (ATR) identification of mass transfer coefficients at the liquid-liquid interface

L8 ANSWER 7 OF 9 WPIDS COPYRIGHT 2004 THE THOMSON CORP on STN
TI Instrument for assay of molecular interaction in multiple wet samples, comprises a source and modulator of broadband infrared radiation, a multiple well sample holder, an infrared radiation detector and a computer.

L8 ANSWER 8 OF 9 WPIDS COPYRIGHT 2004 THE THOMSON CORP on STN

TI Multiple samples spectrum assay apparatus for studying spectral quality of reaction, has broadband infrared radiation source and modulator, sample holder, infrared radiation detector, and computer.

L8 ANSWER 9 OF 9 WPIDS COPYRIGHT 2004 THE THOMSON CORP on STN
TI Polycondensation or polyaddition **reaction monitoring** by **attenuated total reflection** spectroscopy
- involves chemical radical-counting in temperature-dependent infrared absorption bands, with temperature compensation of self-absorption in zirconium ATR crystal via temperature/absorption calibration curve.

=> d ibib abs l8 1-9

L8 ANSWER 1 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:475919 CAPLUS
DOCUMENT NUMBER: 139:186419
TITLE: In Situ **Attenuated Total Reflection** Infrared Spectroscopy: A Sensitive Tool for the Investigation of Reduction-Oxidation Processes on Heterogeneous Pd Metal Catalysts
AUTHOR(S): Buergi, Thomas; Wirz, Ronny; Baiker, Alfons
CORPORATE SOURCE: Institute of Chemical and Bioengineering, Swiss Federal Institute of Technology, ETH Hoenggerberg, Zurich, CH-8093, Switz.
SOURCE: Journal of Physical Chemistry B (2003), 107(28), 6774-6781
CODEN: JPCBFK; ISSN: 1520-6106
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Alternative exposure of Pd thin films and Pd/TiO2 catalysts to dissolved hydrogen and oxygen leads to significant changes in the reflectivity of IR radiation as observed in **attenuated total reflection** spectroscopy. The reflectivity decreases and the **absorbance** increases upon changing from oxygen- to hydrogen-saturated solvent. Reflectivity calcns. based on the Drude model for the Pd thin film show that a slight change in the concentration of the free electrons of the metal could be at the origin of the observed effect. Alternatively, the reversible formation of a surface oxide layer can lead to a similar observation. The reflectivity changes can be used to follow the changes of the metal catalyst, similar to potential measurements, however without the need to work in conducting media. They can be correlated with the **observation** of adsorbed species and the formation of **reaction** products. The potential of the method for in situ studies of catalytic solid-liquid interfaces is demonstrated for the oxidation of 2-propanol and ethanol. Upon changing from reducing to oxidizing conditions, the **observation** of **reaction** products is slightly offset with respect to the observed reflectivity change in both cases, whereas the frequency of the CO vibration shifts at the same time as the reflectivity increases.
REFERENCE COUNT: 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 2 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:366696 CAPLUS
DOCUMENT NUMBER: 137:114941
TITLE: Evaluation of structure and gas response in porphyrin Langmuir-Blodgett films by **attenuated total reflection** measurements
AUTHOR(S): Kato, Keizo; Araki, Hitoshi; Shinbo, Kazunari; Kaneko,

Futao; Dooling, Colin M.; Richardson, Tim H.
CORPORATE SOURCE: Graduate School of Science and Technology, Niigata University, Niigata, 950-2181, Japan
SOURCE: Japanese Journal of Applied Physics, Part 1: Regular Papers, Short Notes & Review Papers (2002), 41(4B), 2779-2783
CODEN: JAPNDE
PUBLISHER: Japan Society of Applied Physics
DOCUMENT TYPE: Journal
LANGUAGE: English
AB **Attenuated total reflection** (ATR) properties were measured for porphyrin Langmuir-Blodgett (LB) films, and the structure and response to NO2 gas were investigated. The porphyrin mol. was 5,10,15,20-tetrakis(3,4-bis[2-ethylhexyloxyphenyl])-21H,23H-porphine (EHO). The EHO LB films were deposited onto Ag evaporated glass substrates by a vertical dipping method with an ultrafast deposition rate of 1000 mm/min. The response of optical **absorbance** to NO2 gas was very fast. The thickness and the complex dielec. consts. of the EHO LB films evaluated from the ATR properties measured at 632.8 nm were thought to be related to the island structure of the EHO LB films. The isolated micron-size domains, which are themselves composed of grains of several nm in diameter, were also observed in the EHO LB films by atomic force microscopy. The ATR properties at 488.0 nm were considered to be related to the dispersion properties due to the optical absorption band of the EHO LB films. From the NO2 gas response measurements, the ATR properties at 488.0 nm were found to be more sensitive than those at 632.8 nm. The response to NO2 gas and the recovery properties in the ATR measurements were also examined
REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 3 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1998:224344 CAPLUS
DOCUMENT NUMBER: 128:244383
TITLE: Isobutylene polymerization kinetics at low [TiCl4] via real-time in situ FTIR-ATR spectroscopy
AUTHOR(S): Storey, Robson F.; Donnalley, Andrew B.
CORPORATE SOURCE: Department of Polymer Science, The University of Southern Mississippi, Hattiesburg, MS, 39406-0076, USA
SOURCE: Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (1998), 39(1), 329-330
CODEN: ACPPAY; ISSN: 0032-3934
PUBLISHER: American Chemical Society, Division of Polymer Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The kinetics of the controlled living carbocationic polymerization of isobutylene (IB) were **measured** via in situ, real-time **reaction monitoring** of monomer concentration using mid-IR ATR-FTIR spectroscopy. The method was used to resolve a controversy in the literature regarding the kinetic order with respect to the Lewis acid concentration in IB polymns. co-initiated by TiCl4. Various reports suggest second order dependency when [TiCl4]>[chain ends] and possible first order when [TiCl4]<[chain ends]. Thus, the pseudo-first-order **reaction** kinetics for the 5-tert-butyl-1,3-bis(2-chloro-2-propyl)benzene/TiCl4 initiating system in hexane/methyl chloride (60:40 volume/volume) cosolvents at -80° were **measured** for [TiCl4] ≤ chain end concentration (CE), 2,4-dimethylpyridine (DMP) concentration = 2.0 + 10-3 M, and [IB]o = 1.0 M by **monitoring** the disappearance of the **absorbance** at 887 cm-1 associated with the =CH2 wag of IB. Initial results indicate a second order kinetic dependence on [TiCl4] as is seen in systems with

[TiCl4] >> [CE].
REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 4 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1989:412974 CAPLUS
DOCUMENT NUMBER: 111:12974
TITLE: Attenuated total reflectance FT-IR spectroscopy to **measure** interfacial **reaction** kinetics at silica surfaces
AUTHOR(S): Parry, D. B.; Harris, J. M.
CORPORATE SOURCE: Dep. Chem., Univ. Utah, Salt Lake City, UT, USA
SOURCE: Report (1988), Order No. AD-A196330, 15 pp. Avail.: NTIS
From: Gov. Rep. Announce. Index (U. S.) 1988, 88(22), Abstr. No. 855,119
DOCUMENT TYPE: Report
LANGUAGE: English
AB **Attenuated total reflection** (ATR) Fourier transform (FT) IR spectroscopy was adapted to measure the rates of chemical modification reactions at SiO2 surfaces. As oxidized Si layer was used as a model SiO2 layer was used as a model SiO2 surface. A flow cell was filled with a solution of a surface-active reagent. ATR IR spectra were obtained at regular time intervals, where confinement of the intensity of the interface by total internal reflection provides a measure of local changes in concentration of species which adsorb or bind to the surface. The effect of the SiO2 layer on the sensitivity of measuring **absorbance** at the SiO2-solution interface was investigated. A model reaction study was carried out to determine the binding kinetics SiPh2Cl2 to SiO2 from CCl4 solution The technique yields both in situ kinetic and structural information.

L8 ANSWER 5 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1988:577519 CAPLUS
DOCUMENT NUMBER: 109:177519
TITLE: **Attenuated total reflection** FT-IR spectroscopy to **measure** interfacial **reaction** kinetics at silica surfaces
AUTHOR(S): Parry, D. B.; Harris, J. M.
CORPORATE SOURCE: Dep. Chem., Univ. Utah, Salt Lake City, UT, 84112, USA
SOURCE: Applied Spectroscopy (1988), 42(6), 997-1004
CODEN: APSPA4; ISSN: 0003-7028
DOCUMENT TYPE: Journal
LANGUAGE: English
AB **Attenuated total reflection** (ATR) FT-IR spectroscopy was adapted to measure the rates of chemical modification reactions at SiO2 surfaces. An oxidized Si layer was used as a model SiO2 surface in measurements of the rates of chemical modification. A flow cell was filled with a solution of a surface active reagent. ATR IR spectra were obtained at regular time intervals, where confinement of the intensity to the interface by total internal reflection provides a measure of local changes in concentration of species which adsorb or bind to the surface. The effect of the SiO2 layer on the sensitivity of measuring **absorbance** at the SiO2-solution interface was investigated. A model reaction study was carried out to determine the binding kinetics of diphenylchlorosilane to SiO2 from CCl4 solution The technique yields both in situ kinetics and structural information about the reaction of this reagent with SiO2 surfaces.

L8 ANSWER 6 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1983:557733 CAPLUS

DOCUMENT NUMBER: 99:157733
TITLE: An approach to direct process treatment in phase transfer catalysis (PTC): **attenuated total reflection** spectroscopic (ATR) identification of mass transfer coefficients at the liquid-liquid interface
AUTHOR(S): Trifonov, A. Z.; Nikolova, B. M.; Kuzmanova, R. B.; Ivanov, C.
CORPORATE SOURCE: Fac. Chem., Univ. Sofia, Sofia, 1113, Bulg.
SOURCE: Zeitschrift fuer Physikalische Chemie (Leipzig) (1983), 264(4), 664-72
CODEN: ZPCLAH; ISSN: 0372-9680
DOCUMENT TYPE: Journal
LANGUAGE: English

AB An ATR spectroscopic method is used to **monitor** the **reaction** product formation at the interface under PTC-conditions and to calculate the mass transfer coefficient (α). The nucleophilic displacement reaction (SN2) between a methanesulfonic ester (substrate) and halide ions (reagent) was studied. In this reaction, interaction occurs in the immediate vicinity of the interface without any catalyst cation circulation between both phases. The halide ion partition coefficient between the two phases was ascertained by radioactive labeling. The exptl. data were processed by computer: the α-values correspond to the best fit of the exptl. **absorbance** (I) vs. time (t) curves to the theor. derived ones. Here the quantity α closely reflects the rate of the substitution reaction, the slowest step in the PTC-reaction sequence.

L8 ANSWER 7 OF 9 WPIDS COPYRIGHT 2004 THE THOMSON CORP on STN
ACCESSION NUMBER: 2004-468346 [44] WPIDS
DOC. NO. NON-CPI: N2004-370059
DOC. NO. CPI: C2004-175502
TITLE: Instrument for assay of molecular interaction in multiple wet samples, comprises a source and modulator of broadband infrared radiation, a multiple well sample holder, an infrared radiation detector and a computer.
DERWENT CLASS: B04 D16 S03 T01
INVENTOR(S): ARCHIBALD, A W; ARCHIBALD, W B
PATENT ASSIGNEE(S): (HYPE-N) HYPER-3 INC
COUNTRY COUNT: 107
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2004048929	A2	20040610	(200444)*	EN	60
RW: AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW					
W: AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW					
AU 2003295805	A1	20040618	(200471)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2004048929	A2	WO 2003-US37387	20031121
AU 2003295805	A1	AU 2003-295805	20031121

FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 2003295805	A1 Based on	WO 2004048929

PRIORITY APPLN. INFO: US 2002-428241P 20021122
AN 2004-468346 [44] WPIDS
AB WO2004048929 A UPAB: 20040712
NOVELTY - Instrument for simultaneous assay of molecular interaction in multiple wet samples through parallel vibrational spectroscopy, comprises a source of broadband infrared radiation, a modulator, a multiple well sample holder, an infrared radiation detector, and a computer.

DETAILED DESCRIPTION - An instrument (I) for simultaneous assay of molecular interaction in multiple wet samples through parallel vibrational spectroscopy, has a source of broadband infrared radiation for probing molecular interactions, a modulator of broadband infrared radiation, multiple well sample holder (130) having an optical interface with each sample well, where the optical interface directs modulated broadband infrared radiation to at least one interface surface between an infrared transparent surface of the sample holder and the sample, allowing internal reflection and subsequent exit of the altered light, an infrared radiation detector for detecting the altered light, and a computer for analyzing data from the infrared radiation detector.

INDEPENDENT CLAIMS are also included for the following:

(1) a sample holder (II) suitable for simultaneous assay of molecular interactions in multiple wet samples through parallel vibrational spectroscopy, has (a) semiconductor substrate, an array of at least 96 wells for accepting fluid, where at least one prismatic feature optically couples to each well, an internal-reflection element extending into each well that is optically coupled to the prismatic feature and provides internal reflections with the well, (b) a substrate for holding an array of at least 96 sample wells, and a prismatic structure for each sample well, where the prismatic structure comprises a material that is transparent to broadband infrared light of wavelengths between 5-10 microns, is at least twice as tall as it is wide and allows the light to enter the optically dense material with an incidence angle that exceeds the critical angle for total internal reflection or (c) a substrate for holding an array of at least 3 sample units, where each unit comprises, a capillary fed sample well having at least one surface that is infrared transparent, at least one sample injection port, at least one sample removal port, and capillaries that connect each port to the sample well;

(2) manufacturing (M1) (II) involves repeated anisotropic wet etching of the semiconductor substrated to form a two dimensional array of at least 96 wells, where each prismatic feature has a mean width of between 5 and 100 microns and has a mean height of between 10 and 10000 microns;

(3) a tool (III) for detecting effects of chemical compounds on cellular activities or for detecting desirable genetic manipulations in vitro, has a source of broadband infrared radiation having wavelengths longer than 5 nm, a temperature controlled wet cell sample holder having at least 16 wells that hold and maintain metabolizing cells at a constant temperature, where each well has at least one surface in contact with the cells that is transparent to the infrared radiation, one or more prismatic structures for directing the broadband infrared radiation into the infrared radiation transparent surfaces with an incidence angle that exceeds the critical angle for total internal reflection that penetrates a layer of cells in contact with the surface and an infrared imaging detector that collects reflected light; and

(4) a high throughput method (M2) for studying the spectral quality of a reaction involving a set of biomolecules in solution, involves immobilizing or synthesizing the set of biomolecules on an array surface with different species of biomolecules at discrete immobilizing locations of the array surface, where the array surface is transparent to infrared

radiation longer than 5 microns wavelengths and each immobilizing location is in optical contact with a prismatic structure that directs infrared light longer than 5 microns wavelength into the array surface with an incidence angle that exceeds the critical angle for total internal reflection that penetrates at least one micron of the solution, irradiating the array surface with broadband infrared radiation of wavelengths longer than 5 nm, collecting reflected broadband light spectra from each immobilized location and calculating multiple **absorbance** values for the immobilizing location using Fourier transform.

USE - (I), (II) and (M2) are useful for simultaneous assay of molecular interaction in multiple wet samples through parallel vibrational spectroscopy. (III) is useful for detecting effects of chemical compounds on cellular activities or for detecting desirable genetic manipulations in vitro (claimed). (I) is useful for identifying an individuals propensity to a disease state, or of a disease condition of the individual, which involves obtaining a spectral fingerprint of a biological specimen of the individual using (I), comparing the spectral fingerprint with a reference indicating a normal spectrum or range of normal spectra to obtain a difference, and comparing the difference with expected differences to make a clinical or predictive conclusion.

ADVANTAGE - (I) enables rapid spectrum assay of multiple samples. (II) enables optical study of large number of chemistries simultaneously.

DESCRIPTION OF DRAWING(S) - The figure shows schematic outline of optics used for reflectance measurements of **attenuated total reflection**.

light source 105
beam splitter 110
interferometer mirrors 115
spectral filter 120
beam steering optics 125
sample holder 130
optics 135
infrared camera 140

Dwg.1/6

L8 ANSWER 8 OF 9 WPIDS COPYRIGHT 2004 THE THOMSON CORP on STN

ACCESSION NUMBER: 2004-031729 [03] WPIDS
DOC. NO. NON-CPI: N2004-025037
DOC. NO. CPI: C2004-010528
TITLE: Multiple samples spectrum assay apparatus for studying spectral quality of reaction, has broadband infrared radiation source and modulator, sample holder, infrared radiation detector, and computer.
DERWENT CLASS: A89 B04 D16 J04 L03 S03 T01
INVENTOR(S): ARCHIBALD, A W; ARCHIBALD, W B
PATENT ASSIGNEE(S): (ARCH-I) ARCHIBALD A W; (ARCH-I) ARCHIBALD W B
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
US 2003175160	A1	20030918	(200403)*		26

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
US 2003175160	A1 Provisional	US 2002-356111P	20020214
		US 2003-366464	20030214

PRIORITY APPLN. INFO: US 2002-356111P 20020214; US

2003-366464 20030214

AN 2004-031729 [03] WPIDS

AB US2003175160 A UPAB: 20040112

NOVELTY - Multiple samples spectrum assay apparatus comprises source of broadband infrared radiation for probing molecular interactions, modulator of broadband infrared radiation, multiple well sample holder having optical interface with each sample well, infrared radiation detector, and computer.

DETAILED DESCRIPTION - Multiple samples spectrum assay apparatus comprises source of broadband infrared radiation for probing molecular interactions, modulator of broad board infrared radiation, multiple well sample holder (130) having optical interface with each sample well, infrared radiation detector, and computer. The optical interface directs modulated broadband infrared radiation to interface surface(s) between infrared transparent surface of sample holder and sample. The optical interface allows internal reflection and exit of the altered light. The infrared radiation detector detects the altered light. The computer analyzes data from the infrared radiation detector.

INDEPENDENT CLAIMS are included for:

(1) sample holder for simultaneous assay of molecular interaction in multiple wet samples via parallel vibrational spectroscopy comprising semiconductor substrate, array of at least 96 wells for accepting fluid, and internal reflection mechanism extending into each well;

(2) a tool for detecting effects of chemical compounds on cellular activities or for detecting genetic manipulations in vitro comprising source of broadband infrared radiation, temperature controlled wet cell sample holder, prismatic structure(s), and infrared imaging detector;

(3) manufacturing of sample holder comprising repeated anisotropic wet etching of semiconductor substrate to form dimensional array of at least 96 wells;

(4) high throughput method for studying the spectral quality of reaction involving set of bio-molecules in solution comprising immobilizing or synthesizing set of bio-molecules on an array surface with different species of bio-molecules at discrete immobilizing locations of the array surface, irradiating the array surface with broadband infrared radiation of wavelengths longer than 5 nm, collecting reflected broadband light spectra from each immobilized location, and calculating multiple **absorbance** values for immobilizing locations using Fourier transform.

USE - For simultaneous assay of molecular interaction in multiple wet samples via parallel vibrational spectroscopy used in studying the spectral quality of reaction.

ADVANTAGE - The invention increases the total light throughput. It eliminates problems relating to sensitivity and speed limitations.

DESCRIPTION OF DRAWING(S) - The figure shows a schematic outline of optics used for reflectance measurements of **attenuated total reflection**.

Light source 105
Beam splitter 110
Spectral filter 120
Beam steering optics 125
Sample holder 130
Optics 135
Infrared camera 140

Dwg.1/12

L8 ANSWER 9 OF 9 WPIDS COPYRIGHT 2004 THE THOMSON CORP on STN

ACCESSION NUMBER: 1996-079252 [09] WPIDS

DOC. NO. NON-CPI: N1996-065897

TITLE: Polycondensation or polyaddition **reaction monitoring** by **attenuated total reflection** spectroscopy - involves chemical

radical-counting in temperature-dependent infrared absorption bands, with temperature compensation of self-absorption in zirconium ATR crystal via temperature/absorption calibration curve.

DERWENT CLASS: S03
INVENTOR(S): SCHRECKENBERG, M; WOLF, U
PATENT ASSIGNEE(S): (FARB) BAYER AG
COUNTRY COUNT: 9
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
EP 694781	A1	19960131	(199609)*	GE	6
R: DE ES FR GB IT					
DE 4426944	A1	19960201	(199610)		5
CA 2154737	A	19960130	(199620)		
JP 08062126	A	19960308	(199620)		5
US 5578827	A	19961126	(199702)		5
EP 694781	B1	19991215	(200003)	GE	
R: DE ES FR GB IT					
DE 59507418	G	20000120	(200011)		
ES 2139788	T3	20000216	(200016)		
MX 196806	B	20000605	(200133)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
EP 694781	A1	EP 1995-111219	19950718
DE 4426944	A1	DE 1994-4426944	19940729
CA 2154737	A	CA 1995-2154737	19950726
JP 08062126	A	JP 1995-207339	19950724
US 5578827	A	US 1995-504381	19950719
EP 694781	B1	EP 1995-111219	19950718
DE 59507418	G	DE 1995-507418	19950718
		EP 1995-111219	19950718
ES 2139788	T3	EP 1995-111219	19950718
MX 196806	B	MX 1995-3275	19950728

FILING DETAILS:

PATENT NO	KIND	PATENT NO
DE 59507418	G Based on	EP 694781
ES 2139788	T3 Based on	EP 694781

PRIORITY APPLN. INFO: DE 1994-4426944 19940729
AN 1996-079252 [09] WPIDS
AB EP 694781 A UPAB: 19960305

The **reaction monitoring** involves a low-pressure **attenuated total reflection** cell in which an infrared **measurement** beam (1) is deflected by mirrors (2,3) into and out of a pref. zirconium dioxide crystal (4) in a stainless steel casing (5). The **reaction** prod. (7) flows through a narrow gap (9) along the wetted face (6) of the crystal between seals (8).

The infrared absorption of each chemical group is measured at one or more wave numbers, and the temperature of the sample is found from comparison with a temperature/absorption calibration curve, which is used for correcting the temperature dependence of the sample absorption spectra, using the measured sample temperature

ADVANTAGE - Reaction times can be shortened and plant throughput increased by real-time analysis of hydroxyl, NH, isocyanate or acid

radical counts on the reagents.
Dwg.1/1

ABEQ US 5578827 A UPAB: 19970108
In a process for monitoring polycondensation or polyaddition reactions by measuring the OH, NH or NCO value or acid value of participating reactants by means of infra-red ATR spectroscopy, the improvement which comprises measuring the temperature-dependent IR absorption of the OH, NH or NCO value or acid value of a sample at at least one wavenumber, measuring the temperature-dependent self-absorption of an ATR measuring crystal, comparing the latter with a temperature/absorption calibration value of the measuring crystal, and using the comparison to determine the sample temperature and to correct the temperature-dependence of the sample absorption spectra by means of the determined sample temperature.
Dwg.1/1

=> FIL STNGUIDE

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DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-4.20	-4.20

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=> file medline, biosis, caplus, embase, wpids

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.36	87.51

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	0.00	-4.20

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FILE 'MEDLINE, BIOSIS, CAPLUS, EMBASE, WPIDS' ENTERED AT 16:47:01 ON 26 NOV 2004

L1 5215 ATTENUATED (W) TOTAL (W) REFLECTION
L2 281382 (MONITOR? OR OBSERV? OR MEASUR?) (S) (REACTION)
L3 88 L1 AND L2
L4 48132 LIGHT (5N) ABSORB?
L5 1 L3 AND L4
L6 10 ABSORB? AND L3
L7 10 DUP REM L6 (0 DUPLICATES REMOVED)
L8 9 L7 NOT L5

FILE 'STNGUIDE' ENTERED AT 17:00:21 ON 26 NOV 2004

FILE 'MEDLINE, BIOSIS, CAPLUS, EMBASE, WPIDS' ENTERED AT 17:03:49 ON 26 NOV 2004

=> s l1 anderson J?/au
MISSING OPERATOR L1 ANDERSON
The search profile that was entered contains terms or
nested terms that are not separated by a logical operator.

=> s l1 and anderson J?/au
L9 5 L1 AND ANDERSON J?/AU

=> l1 and tarczynski F?/au
L10 2 L1 AND TARCZYNSKI F?/AU

=> l1 and walker d?/au
L11 7 L1 AND WALKER D?/AU

=> l9 or l10 or l11
L12 10 L9 OR L10 OR L11

=> dup rem l12
PROCESSING COMPLETED FOR L12
L13 8 DUP REM L12 (2 DUPLICATES REMOVED)

=> t ti l13 1-8

L13 ANSWER 1 OF 8 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 1
TI Method and apparatus for monitoring solid phase chemical reactions

L13 ANSWER 2 OF 8 CAPLUS COPYRIGHT 2004 ACS on STN
TI In vitro monocyte adhesion and activation on modified FEP copolymer surfaces

L13 ANSWER 3 OF 8 CAPLUS COPYRIGHT 2004 ACS on STN
TI Surface sensitivity of SiON integrated optical waveguides (IOWs) examined by IOW-**attenuated total reflection** spectrometry and IOW-Raman spectroscopy

L13 ANSWER 4 OF 8 CAPLUS COPYRIGHT 2004 ACS on STN
TI Integrated optical waveguide **attenuated total reflection** spectrometry and resonance Raman spectroscopy of adsorbed cytochrome c

L13 ANSWER 5 OF 8 CAPLUS COPYRIGHT 2004 ACS on STN
TI Cooperativity in the binding of avidin to biotin-lipid-doped Langmuir-Blodgett films

L13 ANSWER 6 OF 8 CAPLUS COPYRIGHT 2004 ACS on STN
TI Low loss HEMA/EMA copolymer waveguides with a range of wetting and optical

properties

L13 ANSWER 7 OF 8 CAPLUS COPYRIGHT 2004 ACS on STN
TI Protein adsorption to HEMA/EMA copolymers studied by integrated optical techniques

L13 ANSWER 8 OF 8 BIOSIS COPYRIGHT (c) 2004 The Thomson Corporation. on STN
DUPLICATE 2
TI CHARACTERIZATION OF PROTEIN ADSORPTION ON SOFT CONTACT LENSES 1. CONFORMATIONAL CHANGES OF ADSORBED HUMAN SERUM ALBUMIN.

=> d ibib abs l13 2-8

L13 ANSWER 2 OF 8 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1995:942759 CAPLUS
DOCUMENT NUMBER: 124:15447
TITLE: In vitro monocyte adhesion and activation on modified FEP copolymer surfaces
AUTHOR(S): Azeez, A.; Yun, J.; DeFife, K.; Colton, E.; Cahallan, L.; Verhoeven, M.; Cahallan, P.; **Anderson, J. M.**; Hiltner, A.
CORPORATE SOURCE: Dep. Macromol. Sci. Cent. Appl. Polymer Res., Case Western Reserve Univ., Cleveland, OH, 44106, USA
SOURCE: Journal of Applied Polymer Science (1995), 58(10), 1741-9
CODEN: JAPNAB; ISSN: 0021-8995
PUBLISHER: Wiley
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The functional group content and the ionic state of functional groups present on a series of surface modified poly(tetrafluoroethylene/hexafluoropropylene) (FEP) copolymers were characterized by ESCA, contact angle, and **attenuated total reflection** Fourier transform IR spectroscopy (ATR-FTIR). Addnl., after a protein was preadsorbed on these surfaces, in vitro cell (monocyte) adhesion and activation were analyzed. The two proteins in this study were fibrinogen and IgG. Four modified FEP surfaces were prepared with increasing concentration of carboxyl groups relative to amide groups; ESCA was used to quantify the functional group content. To characterize the ionic state of the functional groups at physiol. pH (7.1), the ATR-FTIR spectra were collected at various pH levels. Collectively, the contact angle, ESCA, and ATR-FTIR results suggested that the amide groups were unprotonated and the carboxyl groups were ionized at the physiol. pH. The results from the in vitro studies showed that on the fibrinogen preadsorbed surfaces, monocyte adhesion was higher and monocyte activation was lower on the three surfaces that contained carboxyl groups compared to the FEP surface that had only amide groups. Conversely, the results indicated that the surface chemical had no significant effect on monocyte adhesion or activation on the IgG preadsorbed surfaces.

L13 ANSWER 3 OF 8 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1994:421954 CAPLUS
DOCUMENT NUMBER: 121:21954
TITLE: Surface sensitivity of SiON integrated optical waveguides (IOWs) examined by IOW-**attenuated total reflection** spectrometry and IOW-Raman spectroscopy
AUTHOR(S): Plowman, T. E.; Garrison, M. D.; **Walker, D. S.**; Reichert, W. M.
CORPORATE SOURCE: Department of Biomedical Engineering, Duke University,

Durham, NC, 27708-0281, USA
SOURCE: Thin Solid Films (1994), 243(1-2), 610-15
CODEN: THSFAP; ISSN: 0040-6090
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Langmuir-Blodgett (LB) films doped with increasing amts. of lipophilic cyanine dye were deposited at the surface of SiON waveguides. Propagation losses of incoupled laser light were measured photometrically, and then modeled using an **attenuated total reflection** (ATR) version of the Beer-Lambert law. The SiON waveguides exhibit an exptl. measured surface sensitivity of .apprx.0.033 cm-1 propagation loss per 1012 dyes cm-2 and a detection limit of 8.4 + 1011 dyes cm-2. The exptl. surface sensitivity was 0.4 times less than that predicted by ATR theory that did not account for scatter losses and dye aggregation in the LB film. The discrimination of small signals above background was demonstrated by collecting the integrated optical waveguide Raman spectrum of a submonolayer of avidin bound to the SiON waveguide surface through a biotin-linker. This spectrum is believed to be the 1st spontaneous Raman spectrum reported for a protein film bound to a dielec. substrate.

L13 ANSWER 4 OF 8 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1993:590978 CAPLUS
DOCUMENT NUMBER: 119:190978
TITLE: Integrated optical waveguide **attenuated total reflection** spectrometry and resonance Raman spectroscopy of adsorbed cytochrome c
AUTHOR(S): **Walker, D. S.**; Hellinga, H. W.; Saavedra, S. S.; Reichert, W. M.
CORPORATE SOURCE: Dep. Biomed. Eng., Duke Univ., Durham, NC, 27708, USA
SOURCE: Journal of Physical Chemistry (1993), 97(39), 10217-22
CODEN: JPCHAX; ISSN: 0022-3654
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The heme group of cytochrome c (Cyt C) has resonance absorptions at 520 and 550 nm that arise from x-y degenerate in-plane electronic transitions of the heme moiety. In the present paper, horse heart Cyt C was adsorbed to the surface of a micron-thick silicon oxynitride integrated optical waveguide configurated into a liquid flow cell and prism-coupled with 514.5-nm laser light that was polarized horizontal (TE) and nearly vertical (TM) with respect to the waveguide surface. The adsorbed protein film absorbed light from the evanescent field at the waveguide surface, resulting in two measurable quantities: (1) an increased attenuation of the guided mode intensity in the waveguide and (2) excitation of Cyt C resonance Raman emission. Propagation losses owing to the adsorbed film revealed a Cyt C surface d. indicating submonolayer coverage (50-75 ng/cm2). The dichroic ratio measured by guided mode attenuation was 1.23 ± 0.37, indicating the heme plane of Cyt C had an ensemble-averaged orientation angle of 48° with respect to the surface normal. The TE and TM polarized resonance Raman bands at 1578 cm-1 of the adsorbed Cty C had an intensity ratio of 1.49 that is statistically indistinguishable from the dichroic ratio measured by **attenuated total reflection** spectrometry. The integrated optical waveguide and resonance Raman results are believed to be the first reported Raman spectra of a protein film bound to a dielec. substrate.

L13 ANSWER 5 OF 8 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1993:643945 CAPLUS
DOCUMENT NUMBER: 119:243945
TITLE: Cooperativity in the binding of avidin to biotin-lipid-doped Langmuir-Blodgett films
AUTHOR(S): Zhao, Shulei; **Walker, D. S.**; Reichert, W. M.
CORPORATE SOURCE: Cent. Emerging Cardiovasc. Technol., Duke Univ.,

Durham, NC, 27708-0281, USA
SOURCE: Langmuir (1993), 9(11), 3166-73
CODEN: LANGD5; ISSN: 0743-7463
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Monolayers of arachidic acid (AA) doped with either biotinylated DPPE (B-DPPE) or a chain extracted biotinylated DPPE (B-x-DPPE) were deposited onto alkylsilane treated surfaces of quartz evanescent fiber optic sensors (EFO) by Langmuir-Blodgett (LB) technique. The surface-modified EFOs were used to obtain binding isotherms of fluorescein labeled avidin to the biotin-lipid-doped LB films. Hyperbolic binding isotherms were observed for all B-DPPE doped LB films and for B-x-DPPE doped films with <0.63 mol % biotin lipid. Sigmoid or pos. cooperative binding isotherms were observed for all LB films with ≥0.63 mol % B-x-DPPE. A math. expression for protein binding to a two-dimensional array of receptors that takes protein-protein interaction into account was used to quant. assess the cooperativity observed in the isotherms. **Attenuated total reflection** Fourier transform IR (ATR-FTIR) spectroscopy was used to address speculation that cooperativity resulted from a conformational change in avidin. ATR-FTIR results show that avidin experienced significant conformational changes when bound to biotin lipids in the LB films, whereas no conformational change was observed for avidin nonspecifically bound to biotin-free LB films.

L13 ANSWER 6 OF 8 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1993:627432 CAPLUS
DOCUMENT NUMBER: 119:227432
TITLE: Low loss HEMA/EMA copolymer waveguides with a range of wetting and optical properties
AUTHOR(S): **Walker, D. S.**; Balasubramanian, K.; Reichert, W. M.
CORPORATE SOURCE: Dep. Biomed. Eng., Duke Univ., Durham, NC, 27706, USA
SOURCE: Journal of Applied Polymer Science (1993), 49(12), 2147-55
CODEN: JAPNAB; ISSN: 0021-8995
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Homopolymers and copolymers of optical grade hydroxyethyl methacrylate (HEMA, I) and Et methacrylate (EMA, II) were synthesized with bulk copolymer compns. of 0, 10, 43, 75, 86, 89, and 100% I. **Attenuated total reflection** IR and XPS showed an unhydrated surface composition that varied insignificantly from the bulk. Polymer surface wettability, percent swelling of the copolymers in water, and the bulk refractive index increased with increasing I content. High-quality thin-film integrated optical waveguides (IOWs) were spun cast from copolymer solns. with propagation losses of <1 dB/cm. Waveguide refractive indexes determined from coupling angle measurements agreed closely with the bulk measurements. These results show that I/II copolymers that form transparent films produce polymer IOWs with a range of bulk swellabilities, surface wettabilities, and optical densities.

L13 ANSWER 7 OF 8 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1993:260973 CAPLUS
DOCUMENT NUMBER: 118:260973
TITLE: Protein adsorption to HEMA/EMA copolymers studied by integrated optical techniques
AUTHOR(S): **Walker, D. S.**; Garrison, M. D.; Reichert, W. M.
CORPORATE SOURCE: Dep. Biomed. Eng., Duke Univ., Durham, NC, 27706, USA
SOURCE: Journal of Colloid and Interface Science (1993), 157(1), 41-9
CODEN: JCISA5; ISSN: 0021-9797

DOCUMENT TYPE: Journal
LANGUAGE: English
AB Adsorption of chromophore-labeled bovine serum albumin (BSA) to homopolymers and copolymers of hydroxyethyl methacrylate (HEMA) and Et methacrylate (EMA) was measured using integrated optical waveguide **attenuated total reflection** (IOW-ATR) spectrometry. In IOW-ATR, the intrinsic propagation loss of the waveguide, usually on the order of 1 dB/cm, is increased by the adsorption of a chromophoric mol. to the waveguide/solution interface. Measuring the difference in propagation losses before and after protein adsorption allows one to calculate the amount of protein adsorption (e.g., ng/cm2) directly from the Beer-Lambert law without calibration. Adsorbed amts. ranged from 35-684 ng/cm2 for the HEMA and EMA homopolymers, resp. Radiolabeling expts. of 125I-BSA adsorption to the HEMA/EMA polymers performed in tandem correlated strongly with the IOW-ATR results. Except for the EMA homopolymer, both techniques showed BSA surface densities that increased linearly with decreasing mol% HEMA of the polymer.

L13 ANSWER 8 OF 8 BIOSIS COPYRIGHT (c) 2004 The Thomson Corporation. on STN
DUPLICATE 2
ACCESSION NUMBER: 1985:292508 BIOSIS
DOCUMENT NUMBER: PREV198579072504; BA79:72504
TITLE: CHARACTERIZATION OF PROTEIN ADSORPTION ON SOFT CONTACT LENSES 1. CONFORMATIONAL CHANGES OF ADSORBED HUMAN SERUM ALBUMIN.
AUTHOR(S): CASTILLO E J [Reprint author]; KOENIG J L; **ANDERSON J M**; LO J
CORPORATE SOURCE: DEP MACROMOLECULAR SCI, CASE WESTERN RESERVE UNIV, CLEVELAND, OHIO 44106, USA
SOURCE: Biomaterials, (1984) Vol. 5, No. 6, pp. 319-325.
CODEN: BIMADU. ISSN: 0142-9612.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: ENGLISH
AB Adsorption of human serum albumin on 3 different soft contact lens surfaces (lathe cut and spin cast crosslinked PHEMA and spin cast PHEMA/MAA) was studied. Using ATR[**attenuated total reflection** spectroscopy]-FTIP [Fourier transform IR spectrometer] spectroscopy the spectra of the adsorbed protein were obtained at different times of adsorption. Structural changes were detected, initially characterized by an increase in hydrogen bonding and after that by involvement of the protein hydrophobic side chain residues. At long adsorption times, the protein becomes denatured, its α-helix content was drastically reduced and the amounts of random coil and β-sheet conformations were increased. ATR-FTIR and circular dichroism studies of albumin solutions revealed similar conformational changes to those experienced by the absorbed protein. Differences in the adsorption behavior for the hydrogel surface, indicated the importance of the hydrophilicity, surface regularity and the chemical composition of the contact lens surfaces as the controlling parameters in the protein adsorption phenomena. [Implications with respect to protein clouding and its relationship to compatibility problems, bacterial infection and giant papillary conjunctivitis were presented.].

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FULL ESTIMATED COST	49.80	137.31

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                                                        ENTRY    SESSION
FULL ESTIMATED COST                                      0.12     137.43

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)          SINCE FILE      TOTAL
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CA SUBSCRIBER PRICE                                      0.00      -8.40

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     (FILE 'HOME' ENTERED AT 16:46:40 ON 26 NOV 2004)

     FILE 'MEDLINE, BIOSIS, CAPLUS, EMBASE, WPIDS' ENTERED AT 16:47:01 ON 26
     NOV 2004
L1          5215 ATTENUATED (W) TOTAL (W) REFLECTION
L2        281382 (MONITOR? OR OBSERV? OR MEASUR?) (S) (REACTION)
L3            88 L1 AND L2
L4         48132 LIGHT (5N) ABSORB?
L5             1 L3 AND L4
L6            10 ABSORB? AND L3
L7            10 DUP REM L6 (0 DUPLICATES REMOVED)
L8             9 L7 NOT L5

     FILE 'STNGUIDE' ENTERED AT 17:00:21 ON 26 NOV 2004

     FILE 'MEDLINE, BIOSIS, CAPLUS, EMBASE, WPIDS' ENTERED AT 17:03:49 ON 26
     NOV 2004
L9             5 S L1 AND ANDERSON J?/AU
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L10             2 L1 AND TARCZYNSKI F?/AU
L11             7 L1 AND WALKER D?/AU
L12            10 L9 OR L10 OR L11
L13             8 DUP REM L12 (2 DUPLICATES REMOVED)

     FILE 'STNGUIDE' ENTERED AT 17:14:53 ON 26 NOV 2004

     FILE 'MEDLINE, BIOSIS, CAPLUS, EMBASE, WPIDS' ENTERED AT 17:16:13 ON 26
     NOV 2004

=> l12 and l2
L14             2 L12 AND L2

=> l14 not l5
L15             1 L14 NOT L5

=> t ti l15

L15  ANSWER 1 OF 1  CAPLUS  COPYRIGHT 2004 ACS on STN
TI   Method and apparatus for monitoring solid phase chemical reactions


=> l14 not l15
L16             1 L14 NOT L15

=> t ti l16

L16  ANSWER 1 OF 1  WPIDS  COPYRIGHT 2004 THE THOMSON CORP on STN
TI   Monitoring solid phase chemical reaction involves
     providing reaction mixture comprising solid support and liquid
     reaction medium, and monitoring using attenuated
     total reflection spectroscopy.


=> d ibib abs l14 1-2

L14  ANSWER 1 OF 2  CAPLUS  COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER:         2001:300961  CAPLUS
DOCUMENT NUMBER:          134:297921
TITLE:                    Method and apparatus for monitoring solid phase
                          chemical reactions
INVENTOR(S):              Anderson, Joanne Elizabeth; Tarczynski,
                          Frank Joseph; Walker, Dwight Sherod
PATENT ASSIGNEE(S):       Glaxo Group Limited, UK
SOURCE:                   PCT Int. Appl., 35 pp.
                          CODEN: PIXXD2
DOCUMENT TYPE:            Patent
LANGUAGE:                 English
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.           KIND   DATE        APPLICATION NO.         DATE
     ---------------      ----   --------    --------------------    --------
     WO 2001029537         A2    20010426    WO 2000-US28218         20001012
     WO 2001029537         A3    20011129
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR,
             HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,
             LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU,
             SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN,
             YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
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DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

EP 1221037 A2 20020710 EP 2000-970831 20001012
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL

JP 2003512615 T2 20030402 JP 2001-532079 20001012

PRIORITY APPLN. INFO.: US 1999-159673P P 19991015
WO 2000-US28218 W 20001012

AB A method for **monitoring** a solid phase chemical **reaction** comprises the steps of: (a) providing a **reaction** mixture comprising a solid support and a **reaction** medium, (b) contacting an **attenuated total reflection** element to said **reaction** mixture; and then (c) **monitoring** the chemical **reaction** on the solid support through the **attenuated total reflection** element. The monitoring step is carried out by **attenuated total reflection** spectroscopy. An advantage of the invention is that the chemical **reaction** on the solid support may be directly **monitored**, rather than indirectly **monitoring** that chemical **reaction** by **monitoring reaction** constituents in the **reaction** medium.

L14 ANSWER 2 OF 2 WPIDS COPYRIGHT 2004 THE THOMSON CORP on STN
ACCESSION NUMBER: 2001-355119 [37] WPIDS
DOC. NO. NON-CPI: N2001-258056
DOC. NO. CPI: C2001-109980
TITLE: **Monitoring** solid phase chemical **reaction** involves providing **reaction** mixture comprising solid support and liquid **reaction** medium, and **monitoring** using **attenuated total reflection** spectroscopy.
DERWENT CLASS: A89 B04 J04 S03
INVENTOR(S): **ANDERSON, J E; TARCZYNSKI, F J; WALKER, D S**
PATENT ASSIGNEE(S): (GLAX) GLAXO GROUP LTD
COUNTRY COUNT: 95
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2001029537	A2	20010426	(200137)*	EN	33
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW					
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AU 2000080154	A	20010430	(200148)		
EP 1221037	A2	20020710	(200253)	EN	
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI					
JP 2003512615	W	20030402	(200325)		42

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2001029537	A2	WO 2000-US28218	20001012
AU 2000080154	A	AU 2000-80154	20001012
EP 1221037	A2	EP 2000-970831	20001012
		WO 2000-US28218	20001012

JP 2003512615	W	WO 2000-US28218	20001012
		JP 2001-532079	20001012

FILING DETAILS:

PATENT NO	KIND		PATENT NO
AU 2000080154	A	Based on	WO 2001029537
EP 1221037	A2	Based on	WO 2001029537
JP 2003512615	W	Based on	WO 2001029537

PRIORITY APPLN. INFO: US 1999-159673P 19991015

AN 2001-355119 [37] WPIDS

AB WO 200129537 A UPAB: 20010704

NOVELTY - **Monitoring** a solid phase chemical **reaction** by (i) providing a **reaction** mixture comprising a solid support and a liquid **reaction** medium; (ii) contacting an **attenuated total reflection** element to the **reaction** mixture; and then (iii) directly **monitoring** the chemical **reaction** on the solid support through the **attenuated total reflection** element. The **monitoring** step is conducted using **attenuated total reflection** spectroscopy.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for:

(1) An apparatus for generating a solid phase combinatorial library, comprising (a) a chemical synthesis robot to receive **reaction** wells; (b) a reagent repository operatively associated with the robot; (c) an **attenuated total reflection** element operatively associated with the robot for insertion into at least one of the **reaction** wells; (d) an **attenuated total reflection monitor** operatively associated with the reflection element to **monitor** a solid phase synthesis **reaction** in the well by **attenuated total reflection** spectroscopy; and (e) a synthesis controller operatively associated with both the reagent repository and the robot, to control the construction of a solid phase combinatorial library in the **reaction** wells and operatively associated with the reflection **monitor**.

(2) A method of making a combinatorial library by solid phase chemical synthesis involving (a) combining a solid support, a liquid **reaction** medium and **reaction** reagents to produce a **reaction** mixture in a **reaction** well; (b) contacting an **attenuated total reflection** element with the **reaction** mixture; (c) directly **monitoring** the chemical **reaction** on the solid support through the reflection element to detect completion of the **reaction**; (d) separating the solid support from the liquid **reaction** medium and the **reaction** reagents upon detecting completion; and (e) repeating (a) - (c) with the separated solid supports; and

(3) A method of making a combinatorial library comprising at least 100 different compounds, with each of the compounds immobilized on a discrete solid support, by at least two sequential reaction cycles each comprising a solid phase chemical reaction and completing each cycle in an average of 1-8 hours.

USE - For monitoring solid phase chemical reactions.

ADVANTAGE - The chemical **reaction** on the solid support can be directly **monitored**, rather than indirectly **monitoring** the **reaction** constituents in the **reaction** medium.

DESCRIPTION OF DRAWING(S) - The drawing shows the apparatus and the relationship of the solid support beads to the attenuated total reflectance element.

probe 20

```
          total reflection element 22
          uv/visible light spectrograph 25
          solid phase reaction medium 30
     liquid phase 31
     solid support 32
     paths 35,36
     Dwg.1A-C/13


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     NOV 2004
L14            2 L12 AND L2
L15            1 L14 NOT L5
L16            1 L14 NOT L15

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                                                   ENTRY    SESSION
FULL ESTIMATED COST                                12.92     150.35

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)    SINCE FILE      TOTAL
                                                   ENTRY    SESSION
CA SUBSCRIBER PRICE                                -0.70      -9.10

 SESSION WILL BE HELD FOR 60 MINUTES
STN INTERNATIONAL SESSION SUSPENDED AT 17:19:20 ON 26 NOV 2004
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